

# Notice of Allowability

Application No.

10/017,702

Examiner

Donald L. Storm

Applicant(s)

CHEN ET AL.

Art Unit

2654

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's correspondence filed December 14, 2001 through January 13, 2005.
2. ☒ The allowed claim(s) is/are 1-23.
3. ☒ The drawings filed on 12 December 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 2
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

1. An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to the Applicant, an amendment may be filed as provided by 37 CFR § 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee. Authorization for the examiner's amendment that appears below was given in a telephone interview with Mr. Kyle B. Rinehart, Attorney of Record, on January 28, 2005.

#### IN THE TITLE:

Delete the title currently on file and insert therefor --Quantization Matrices Based on Critical Band Pattern Information for Digital Audio wherein Quantization Bands Differ From Critical Bands--.

#### IN THE SPECIFICATION:

At page 1, line 5, change "aa/bbb,ccc" to --10/020,708--.

At page 1, line 8, change "aa/bbb,ccc" to --10/016,918--.

At page 1, line 10, change "aa/bbb,ccc" to --10/017,694--.

At page 1, line 12, change "aa/bbb,ccc" to --10/017,861--.

At page 31, line 23, change "coded" (first occurrence) to --reconstructed--.

#### IN THE CLAIMS:

In claim 7, line 1, change "1" to --5--.

Cancel claims 24-66 without prejudice.

***Election/Restriction***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-23, drawn to a method, a medium with instructions, and an apparatus for computing a quantization matrix for quantization bands that differ from bands of an auditory model, classified in class 704, subclass 200.1.
  - II. Claims 24-27, drawn to a medium with instructions to compute pattern information to use in generating a quantization matrix, classified in class 704, subclass 223.
  - III. Claims 28-44, drawn to an apparatus or a medium with instructions to generate or apply a single quantization matrix or several matrices capable of weighting all channels of multichannel data, classified in class 704, subclass 201 or 500.
  - IV. Claims 45-66 drawn to a medium with instructions, a method, and an apparatus to process a parametric model for signal compression, classified in class 704, subclass 220.
2. The inventions are distinct, each from the other because:
  - a. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as generating a quantization matrix using pattern information without an auditory model. See MPEP § 806.05(d).
  - b. Inventions I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as generating a quantization matrix using channel mode information without an auditory model.

c. Inventions I and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention IV has separate utility such as signal compression vocoding.

d. Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as generating a quantization matrix using channel mode information without pattern information.

e. Inventions II and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention IV has separate utility such as signal compression vocoding.

f. Inventions III and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention IV has separate utility such as signal compression vocoding.

3. Because the inventions of Groups I through IV are distinct for the reasons given above and different fields of search are required for the divergent and differently classified subject matter, it would be a serious burden on the Examiner to search and examine claims directed to the differently presented independent and distinct inventions. Therefore, restriction as indicated for examination purposes is proper. (See MPEP § 803, MPEP § 821.0337, and CFR 1.142(b)).

4. During a telephone conversation with Mr. Kyle B. Rinehart, Attorney of Record, on January 12, 2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-23. Affirmation of this election must be made by applicant in replying to this Office action even though the requirement be traversed (37 CFR 1.143). Claims 24-61 are withdrawn from further consideration by the Examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions.

5. The Applicants are reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Allowable Subject Matter***

1. The following is the Examiner's statement of reasons for allowance. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

2. Claims 1-5, 6, 7, and 8-23 are allowed. The claims have been renumbered for printing to be claims 1-5, 7, 6, and 8-23. Claims 24-66 have been canceled.

3. The independent claims 1, 9, and 18 require generating patterns or pattern information by processing with critical band divisions as the basis for getting quantization weights for quantization band divisions that are not critical bands. The closest prior art that was found (Johnston, Smyth) describes differing quantization and critical bands; however, Johnston and Smyth determine adaptive quantization scale factors directly. That is, neither Johnston nor Smyth also describes quantization band weights computed from the critical band processing.

Nevertheless, the allowable subject matter of independent claims 1, 9, and 18 resides in the whole structure and interaction expressed by the combination of all limitations compared to the prior art of record. No particular reference provides relevant, objective evidence to make the claimed encoder, method, or medium, obvious by changing the closest prior art (Johnston, Smyth) way of determining and providing band quantization parameters to expression as weighting factors or weights, particularly with a proportion to pattern information (claims 1 and 18) or a quantization matrix (claims 1 and 9).

#### *Interview Summary*

4. The Applicant's Interview Summary filed on January 13, 2005 of the interview is substantively acceptable to the Examiner.

#### *Drawings*

5. The drawings filed by the applicant with the application on December 14, 2001 are substantively acceptable to the Examiner. See 37 C.F.R. § 1.81 and 1.83.

### *Conclusion*

6. The following references here made of record are considered pertinent to applicant's disclosure:

Fuchigama et al. [US Patent 5,079,547] describes a plurality of quantization tables that compensate quantization levels by a proportion for transform coefficients per band.

Akagiri et al. [US Patent 5,260,980] describes transform coding with adaptive bit allocation and quantization by Bark (critical) subband processing.

Anderson et al. [US Patent 5,388,181] notes that the bands adopted for vector quantization need not be the same as the bands adopted for band-by-band expansion.

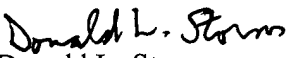
Johnston [US Patent 5,627,938] uses critical band processing to set the scale factor and bit allocation for quantization bands partitioned differently from the critical bands.

Smyth et al. [US Patent 5,956,674] uses Bark (critical) band processing to set the scale factor and bit allocation for uniform-width quantization subbands.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Storm, of Art Unit 2654, whose telephone number is (703) 305-3941. The examiner can normally be reached on weekdays between 8:00 AM and 4:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the

Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: [ebc@uspto.gov](mailto:ebc@uspto.gov). For general information about the PAIR system, see <http://pair-direct.uspto.gov>.

  
Donald L. Storm  
February 7, 2005

  
RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER